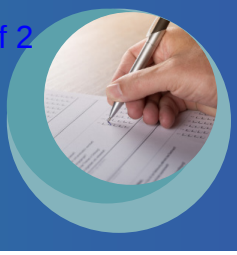


Executive Summary

By Bob Held, CLP and Jack Lu, PhD, CFA

The 2021 LES USA & Canada High Tech Royalty Survey was launched on July 14, 2021 and closed on November 30, 2021. The survey questionnaires were sent to more than 12,000 surveyees worldwide. A total of 58 complete or nearly complete submissions were made by 32 companies or entities. About two thirds of the submitted licenses were from the members of LES USA & Canada. LES Italy and LES Benelux together contributed more than 22% of the submissions.

Additionally, 103 license deals were separately and independently submitted by certain anonymous entities that chose not to use the survey questionnaires. To make the descriptive statistics of non-financial terms and financial terms in the 2021 Survey Report consistent with the previous reports, the 103 transactions are not included for calculating the descriptive statistics. For the econometric analysis in this report, however, a subset of the 103 samples that have the required data and information are integrated into the combined samples from the inaugural survey in 2011 and the subsequent Surveys in 2014, 2017, and 2021.

Among the 58 deals collected from the 2021 Survey, majority of the licensors were academic institutions, while the companies in aerospace are the single largest group of licensees. 45% of the licensees had annual sales below $25 million in 2020; and coincidently, 45% of the licensed products' peak annual sales were estimated by licensees to be below $25 million, too.

Regarding the principal rationales for licensors to enter licenses, the percentage for purely monetary purpose declined from 54% in the 2014 Survey to 24% in the 2021 Survey, while that for future collaboration purpose raised from 26% to 36%. The purely monetary purpose was among the rationales of 24% of the licensees in the 2014 Survey, but the percentage dropped dramatically to less than 7% in the 2021 Survey. This may have reflected the fact that legislative events such as AIA enactment and the introduction of IPR's, as well as various rulings from the Supreme Court of the US and Federal Circuits, have fundamentally reconfigured the landscape of the licensing market and changed the licensing behaviors of the parties in the market.

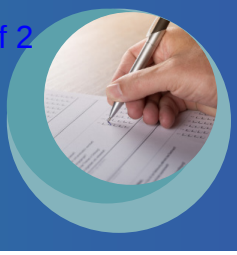
43% of the deals in the 2021 Survey are exclusive and 53% nonexclusive, with the remainder being either acquired or under various other transaction options. About a third of the deals involve technologies in their advanced stages of development, at either full-developed or in-production stage, and 64% of the deals cover only one type of IP. Patents were the most frequently licensed IP rights, appearing in 72% of the deals reported.

By royalty payment method, about 41% of the deals in the 2021 Survey employed sales percentage royalty rate, and 34% used lump sum payment method. Among the combined samples from the four surveys so far, royalty rate and lump sum payment deals accounted for 54% and 24%, respectively.

The average royalty and median rates are 4.82% and 4.75%, respectively, according to the data from the 2021 Survey. Across the four surveys since 2011, the average rate is 5.66%, while the median rate remains at 5%. Average and median royalty rates have also been calculated by various categorizations such as licensee/licensor organization type, licensee size, the amount of peak annual sales of licensed products, type of IP licensed, technology type and development stage, field of use, and exclusivity, among others.

For example, based on the combined samples, the average royalty rate for the deals involving only one type of IP is about 4.9%, much lower than the 6.28% for the deals with multiple types of IP. Also, among the deals in which patents are the only IP licensed, the average royalty rate is 3.77%. As another example, aerospace technology has the highest average rate of 10.7% across various technology types.

While the average lump payment per deal in the 2021 Survey reached $3.34 million, it was boosted mainly by an outlier with a payment of >$50 million. The median lump sum payment per deal, however, continued to decline since the 2014 Survey, and reached a new low of $125,000 in the 2021 Survey. Average lump sum payments per deal have also been calculated for various categorizations as listed above for royalty rate deals.



Since the inaugural survey report in 2011, the survey analysis team has been trying to use econometric models to identify and quantify the value contributions of certain market factors and license parameters. The ultimate goal is to develop a royalty determination approach that would be analogous to the build-up method in business valuation. The assumptions are that each parameter of a license agreement has its own value contribution to royalty determination and that the royalty stipulated in the agreement reflects the value contribution from each of the parameters.

This report employs a dummy variable regression model, one of the commonly-used econometric models, to analyze the royalty rate data and lump sum payment data, separately, based on the combined samples from the four surveys. The regression analysis clearly demonstrates that market factors, including the events such as AIA/IPR and the Alice ruling, may have significantly and structurally transformed the licensing market; and that the market has priced the effects of such events into royalty determinations. The regression analysis also indicates that most of the market factors' effects may have been exerted through changing the practices of licensing, which in turn, alters the value contributions of major license parameters such as exclusivity, technology development stage, and licensor organization types, among various others.

Furthermore, the regression analysis identified and quantified the value contributions, measured by royalty premiums or discounts, of key parameters of license deals. For example, according to the analysis on royalty rate samples, technologies in the aerospace, software, medical and healthcare areas carry significant royalty premiums. So do exclusive licenses, the deals with technologies in fully-developed or in-production stage, and those involving knowhow, drawings and designs. By contrast, governmental licensors seemed to offer significant royalty rate discounts during the pre-AIA/IPR period, although their licensing practices appeared to have some major makeovers during the post-AIA/IPR period.

Finally, but more importantly, this report leverages the insights learned from the regression analysis to provide guidelines for stratifying royalty payment method selection, and to offer benchmark royalty rate premiums or discounts for royalty rate determination. We first demonstrate how major license parameters would fare between royalty rate method and lump sum payment method, and then summarize the key points for practitioners to make decisions on selecting the appropriate payment method. To illustrate how to use the premiums and discounts identified and quantified by the regression analysis in the royalty rate determination, we go through two examples, exclusivity premiums and advanced-stage technology premiums. We then explain how to use these premiums to calculate the reasonable royalty rate when converting a nonexclusive license to an exclusive license, or adjusting the royalty rate for a deal with early-stage technology based on the rate from a comparable deal covering advanced-stage technology; or vice versa.